GSM / GPRS / GPS VEHICLE TRACKER XT-009

Preface

Thank you for purchasing our GPS vehicle tracker. This manual shows how to operate the device smoothly and correctly. Please read this manual carefully before using it. Please note that specification and information are subject to changes without prior notice in this manual. Any change will be integrated in the latest release. The manufacturer assumes no responsibility for any errors or omissions in this document.

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1. Overview of function

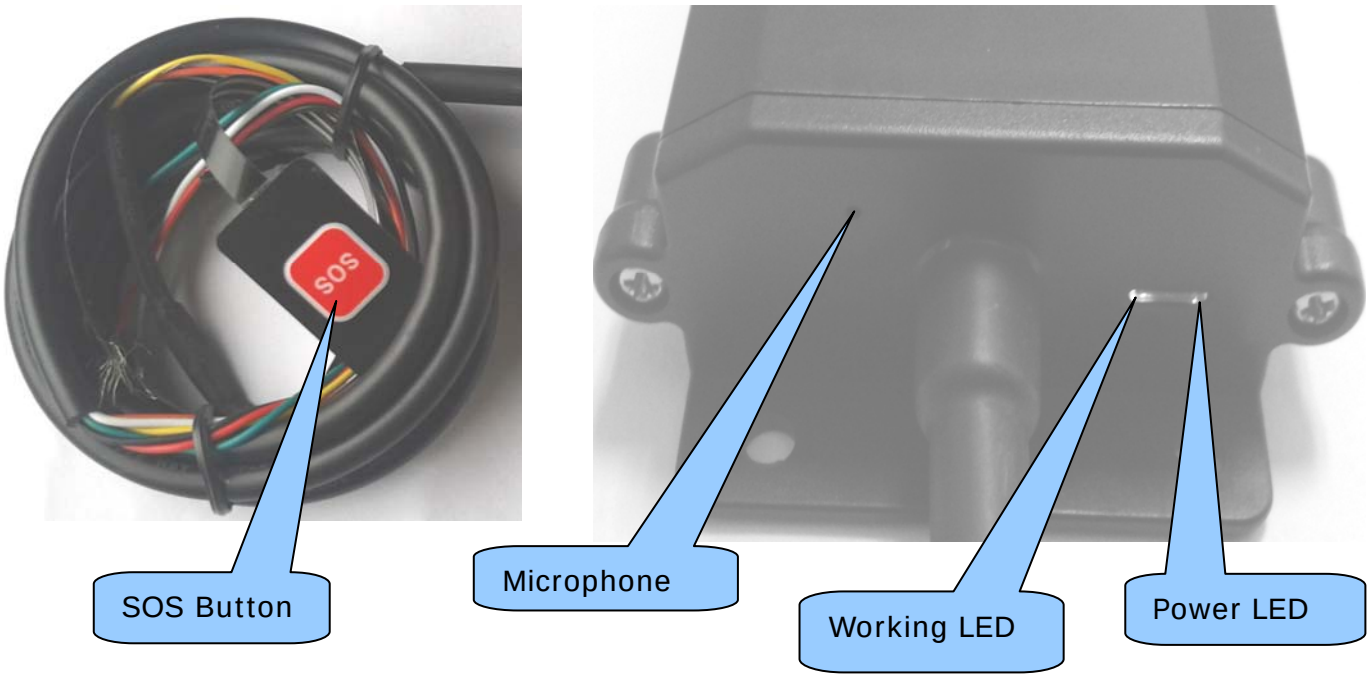
- SMS/GPRS sending data
- Movement/ Geofence/ Speed/ Low battery alarm
- ACC alarm
- SOS alarm
- Remote cut-off electricity &oil function
- Impact alarm (with collision and acceseleration sensor)
- Voice monitoring
- Main power disconnect alarm
- Micro SD card for saving GPRS data
- Remotely update firmware
- Distance limit data transmission

2.Application

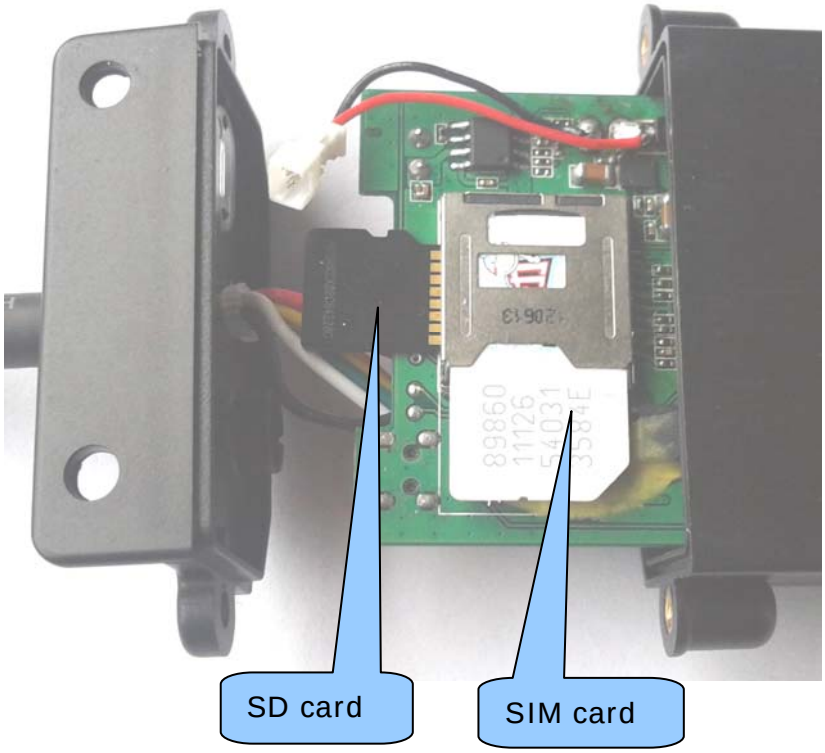
- Vehicle/ship /motorcycle / rental / fleet management
- Children / elderly / disabled guardianship
- Personnel safety
- People management
- Tracking an offense

3.Hardware description

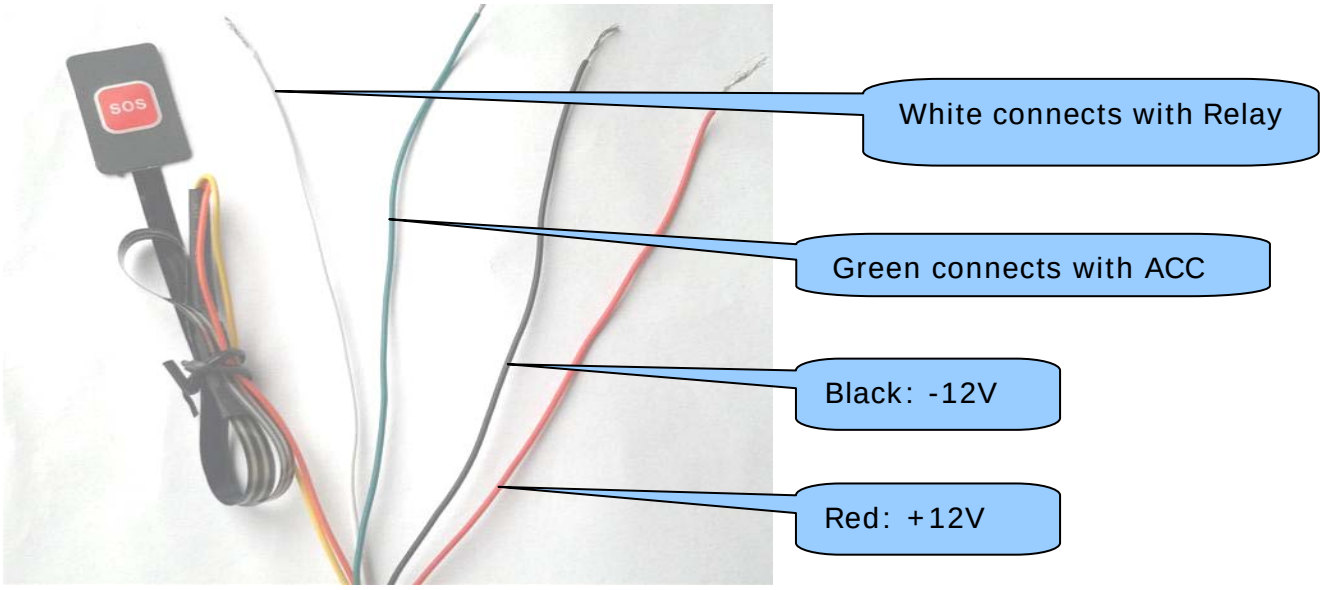
3.1 Outside



3.2 Internal mainboard



4. Wires connection



5. Specification

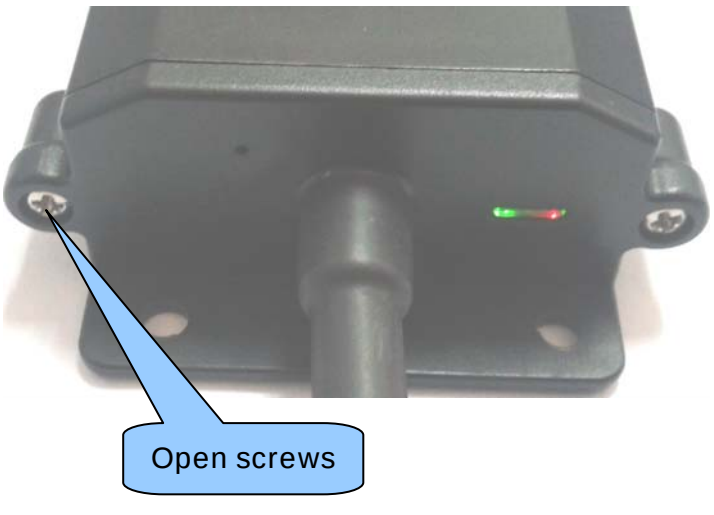
Content	specs
Dimention	73*46*24(mm)
Weight	50g
Network	GSM/GPRS
Band	850/900/1800/1900Mhz
GPS chipest	SIRF3 chip
GPS sensitivity	-159dBm
GPS accuracy	5-10m
Start-up time	Cold status 45s Warm status 35s Hot status 1s
External power supply	DC6-36V input
Battery	3.7V 1200mAh battery
Standby	120hous
Storage Temperature	-40°C to +85°C
Operation Temperature	-30°C to +80°C
Humidity	5%--95% non-condensing

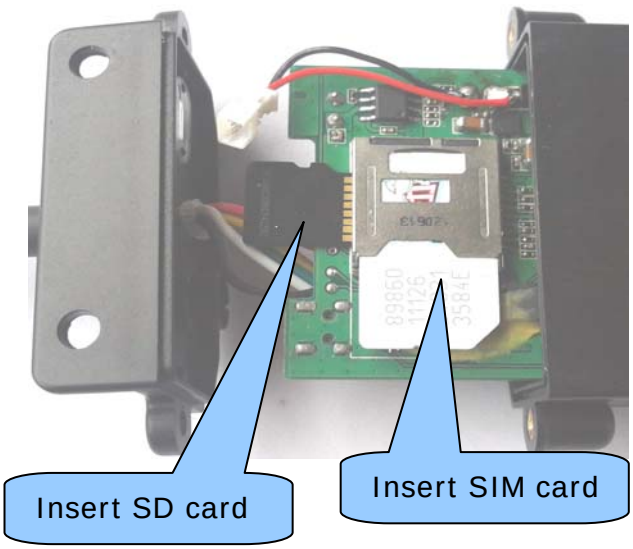
6. Battery and SIM Card installation

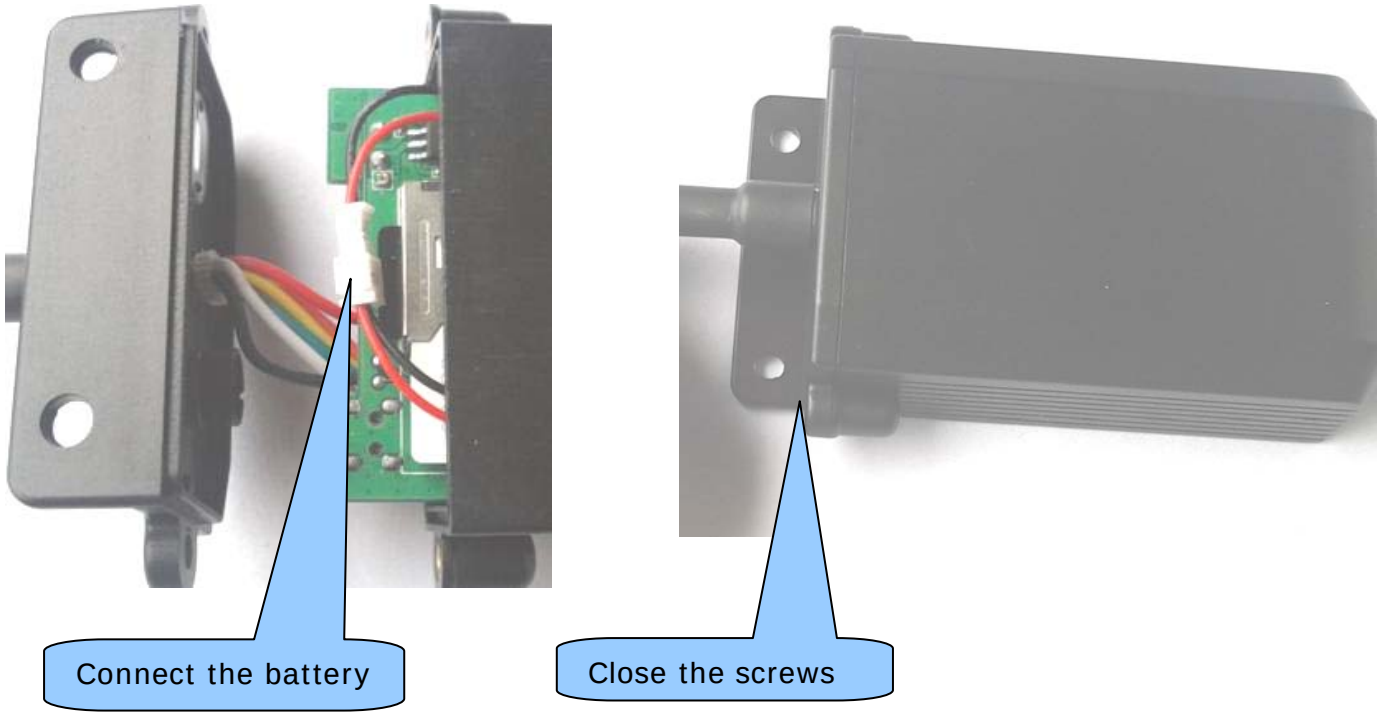
Make sure SIM card have no calling transfer, show calling ID is actived and PIN code is off.

1. Open two screws

2. Insert the SIM card and SD card







7.Startup

- Put the SIM card and SD card in right place,connect the battery with tracker or connect the tracker with car/motorcycle battery 6-36V. it will turn on automatically. the red light will be on if connect with vehicle battery 6-36V, it will be off if disconnect.
- The green light will blink 2 times per second first and will be on for 1 second, off for 3 seconds which means the tracker gets GSM network already.
- It takes 40~90 seconds to receive GPS signals, in order to get good GPS signal, please put the tracker outdoor.

8.Usage

This product has two working modes: **tracking and monitoring.** The default mode is tracking mode, you can send SMS **monitor+password** to switch to monitoring mode and then send **tracker+ password** back to tracking mode.

9. Tracking mode

9.1 Initialization

Send **begin+password** to the tracker, it will reply **begin ok** to initialize all settings.

TO:13188888888 begin123456	From:13188888888 begin ok

9.2 Change password

Send SMS **password+old password+space+new password,** it will reply password OK.
the default password is 123456

TO:13188888888 password123456 888999	From:13188888888 password ok

9.3 Set authorized number

- Send SMS **admin+password+space+cellphone number** to set up the first authorized number.

it will reply admin ok. Other authorized numbers must be set by the first one.
Max 5 authorized numbers.

TO:13188888888 Admin123456 13570803284	From:13188888888 ADMIN OK!

- Send SMS **noadmin+password+space+authorized number** to cancel an authorizated number

TO:13188888888 noadmin123456 3166666666	TO:13188888888 noadmin ok

9.4 SMS format

SMS format from the tracker:

Lat: 22.566901 long: 114.051258 speed: 0.00 14/08/09 06.54 F:3.85V,1,Signal:F imei:354776031555474

05 43.5 460 01 2533 720B

lat:**[latitude]** long:**[longitude]** speed:**[speed] [date] [time]** F:**[battery voltage]**V,**[charging status]**,Signal:**[GPS signal status] [alarm message]*** imei:**[imei number] [number of fixed satellites] [altitude] [MCC] [MNC] [LAC] [CellID]**

[latitude]	GPS received latitude
[longitude]	GPS received longitude
[speed]	GPS received speed
[date]	GPS received date
[time]	GPS received time
F:[battery voltage]V,	battery voltage
[charging status]	“1” in charging, “0” no charging
Signal:[GPS signal status]	“F” GPS fix, “L” no GPS fix
[alarm message]	it indicates alarm type (help me!, moved, Speed etc.) Just ignore this section if no any alarms
imei:[imei number]	The identify number of GSM module
[number of fixed satellites]	GPS satellite fixed number
[altitude]	GPS received altitude
[MCC]	Mobile Country Code
[MNC]	Mobile Network Code
[LAC]	Location area Code
[Cell ID]	GSM cell identities

9.5 Auto-track

- Send SMS t030s005n+password to the unit, it will report the Geo-info at 30s intervals for 5 times.(s: second, m: minute, h: hour).
- The setting must be in 3 digits and at maximum 255 in value.

TO:13188888888

T030s005n123456

From:13188888888

T030s005n ok

- Send SMS t030s***n+password to the unit, it will reply SMS heaps of times
- Cancel: Send notn+password to delete the " auto tracking "

  Remark: the interval must not be less than 5s.

9.6 Tlimit function

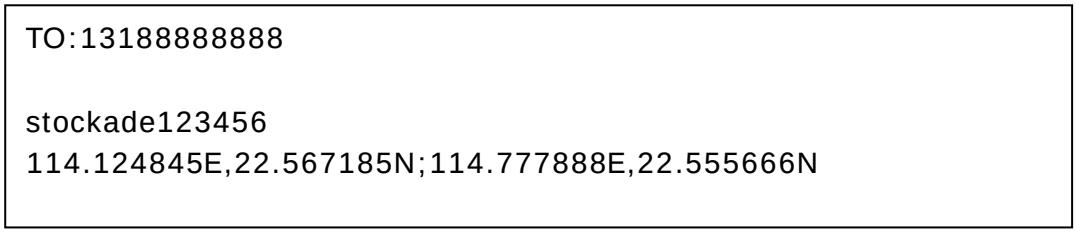
- Set up: Send SMS **tlimit123456 50** , it will reply "tlimit ok" .If the tracker stop moving, it will not send any data to cellphone or server, until the distance is more than 50 meters. Can change to any other meters such as like 100, 500 or 1000, the maximum is 6000meters.

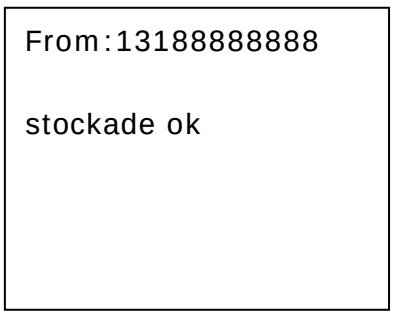
  Remark:this function must be used with auto-tracking function together.

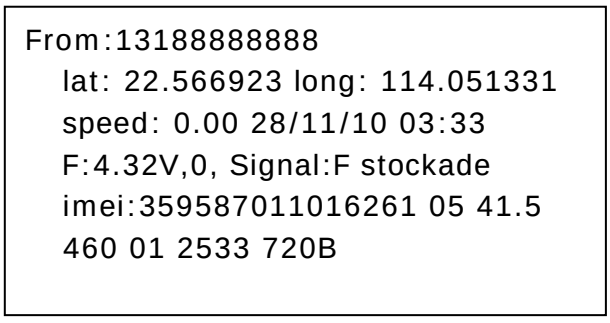
- Cancel : Send SMS **tlimit123456 0** to cancel tlimit function

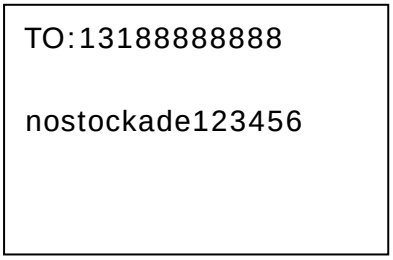
9.7 Geo-fence

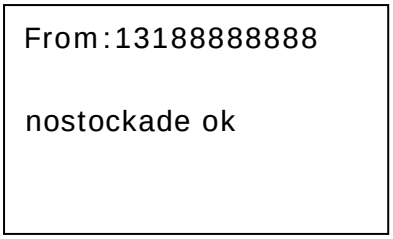
- Setup: Send SMS **stockade+password+space+longitude,latitude; longitude,latitude** to the unit to set the restricted district. The unit will send message to the authorized numbers when it moves out of this district.
- Cancel: Send SMS "nostockade+password" to deactivate this function.It will reply "nostockade ok".
- This function will be invalid if the unit move outside the district. You need to re-set it if you want this function again.
- The first longitude & latitude is coordinate of the top left corner of the Geo-fence, while the second longitude & latitude is the coordinate of the bottom right corner.











9.8 Movement alarm

This function is using for the owner to get alarm when the tracker moves out of setting distance.

- Setup: Send SMS **move+password+distance** to the unit to set the movement alert,it will reply move ok.(the moving distance is from 200mto 6000 meters)

TO:13188888888 move123456 200	From:13188888888 move ok

If device is out of moving distance,it will send alert to authorized number one time in each setting.the reply format is below:

From:13188888888

lat: 22.566923 long: 114.051331 speed: 0.00
28/11/10 03:33 F:4.32V,0, Signal:F move
imei:359587011016261 05 41.5 460 01 2533 720B

- Cancel: Send SMS **nomove+password** to deactivate the movement alert,it will reply nomove ok !

9.9 Overspeed Alert

This function is used to control the user's driving speed.

- Setup: Send SMS **speed+password+space+ the speed**, For example: speed123456 080,it will reply" speed ok"

TO:13188888888 speed123456 080	From:13188888888 speed ok

- Cancel: Send SMS"**nospeed+password** "to deactivate the overspeed alert,it will reply" nospeed ok"

TO:13188888888 nospeed123456	From:13188888888 nospeed ok

- Response SMS format: speed+080!+Geo-info (suppose the speed is 80km/h).
The tracker will check the speed in 3 minutes interval and alarm if it is overspeed.

From:13188888888

lat: 22.566923 long: 114.051331
speed: 0.00 28/11/10 03:33
F:4.32V,0, Signal:F speed
imei:359587011016261 05 41.5
460 01 2533 720B

Remark: It is recommended that the speed alarm is set at 30-200km/h

9.10 IMEI check

Send SMS" imei+password: to the unit,it will reply imei350001122222222 ok.

TO:13188888888

imei23456

From:13188888888

imei350001122222222 ok

9.11 Firmware version check

Send SMS **version +password** to the unit，it will reply the firmware version, like XT009 V1.1 OK

9.12 Time Zone setting

Send "time zone+password + GMT time ,reply "time zone ok". (note: if GMT time is positive, just write the number 1. If time zone is negative, have to write –1)

TO:13188888888

Time zone23456 1

TO:13188888888

Time zone23456 -1

From:13188888888

time zone ok

9.13 SOS button

- If you press SOS button for 3 seconds, tracker will send SOS SMS to all authorized numbers.

Alert SMS format:

From:13188888888

lat: 22.566923 long: 114.051331 speed: 90.00 28/11/10 03:33 F:4.32V,0, Signal:F help me imei:359587011016261 05 41.5 460 01 2533 720B

9.14 SMS LINK

- Send SMS "**smslinkone+password**", the tracker will reply only one google map link to the cellphone immediately .The position can be checked directly by smartphone

Google map link Format:
http://maps.google.com/maps?f=q&hl=en&q=22.567610,114.051227&speed: 0.00 12/11/10 14:36 F:4.22V Signal:F imei:012207000691839

- Send SMS"**smslink+password**", it will reply "smslink OK" . when you call the tracker, it will reply you sms with google map link.

- Send SMS "**smstext+password**", it will reply "smstext OK". The tracker will reply text SMS to cellphone

9.15 SMS ONE

Send SMS"**smsone+password**".The tracker will only send one text SMS to the cellphone or server,instead of calling to get the coordinate.

9.16 Low Battery/main power cut Alert

- When the internal battery voltage is less than 3.7 V, it will send low battery alert to all authorized numbers.

Format:lat: 22.566923 long: 114.051331 speed: 90.00 28/11/10 03:33 F:4.32V,0, Signal:F low batt imei:359587011016261 05 41.5 460 01 2533 720B

- When main power(6-36V) is off or cut,the device will send sms alert to all authorized numbers.

Format:lat: 22.566923 long: 114.051331 speed: 90.00 28/11/10 03:33 F:4.32V,0, Signal:F battery imei:359587011016261 05 41.5 460 01 2533 720B

9.17 SMS Center

- Setup: Send SMS **adminsms+password+space+cell phone number** to setup the SMS center.
  The tracker will reply Geo-info & authorized number to sms center number even if the admin numbers call or sending command to the tracker
- Cancel: Send SMS **noadminsms+password** to cancel the SMS center.

9.18 GSM ID

GSM ID is in each sms or gprs data. The tracker can be found by GSM ID without gps signal. But the customers have to ask their GSM operator for data base of the GSM ID.

9.19 Motion (Acceseleration)Sensor

- Setup: Send SMS **shake+password+space+1-10** to the tracker to set up this function (1-10 means the level of intensity)
- Send SMS **shake+password+space+1** is the least sensitivity . Have to shake the tracker strongly to get the alert.
- Send SMS **shake+password+space+10** is the most sensitivity . Have to shake the tracker slightly to get the alert
- Cancel: Send SMS **shake+password+space+0** to remove this function.

9.20 Micro SD card

Put Micro sd card to the tracker SD card slot. The GPRS data can be saved in the SD card if there is no gsm/gprs network. It will send data to the GPRS server again after connecting gsm/gprs network.

- Setup: Send SMS **sdlog+password+space+1** to activate the sd card-saving function
- Setup: Send SMS **readsd+password+space+1** to ask the tracker to send gprs data in the SD card to the GPRS server.
- Cancel: Send SMS **sdlog+password+space+0** to deactivate this function
- Cancel: Send SMS **readsd+password+space+0** to deactivate this function
- Remark: only need to configure one time before using this function.

9.21 ACC status alert

Connecting device to car ACC,when ACC is on ,the tracker will send “accstart “ ,when ACC is off ,the tracker will send “accstop “

- **Alarm format**: lat: 22.566923 long: 114.051331 speed: 90.00 28/11/10 03:33 F:4.32V,0,

Signal:F **ACCstart** imei:359587011016261 05 41.5 460 01 2533 720B

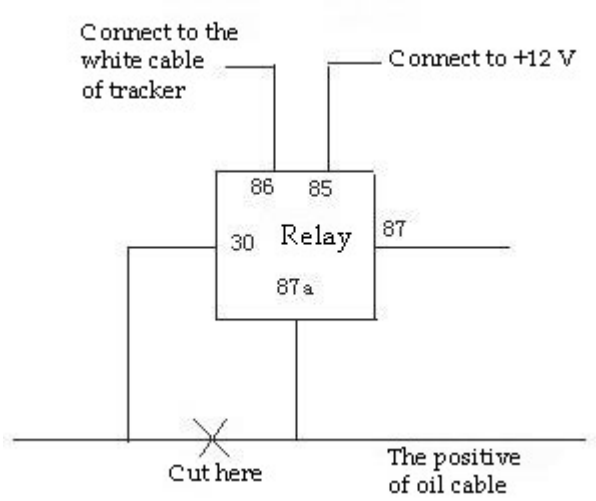
- **Alarm format**: lat: 22.566923 long: 114.051331 speed: 90.00 28/11/10 03:33 F:4.32V,0, Signal:F **ACCstop** imei:359587011016261 05 41.5 460 01 2533 720B

(Note: each time when the ACC status changed it'll send alarm)

9.22. Remote oil & electricity cut-off function

This function is for the car owner to send SMS remotely to stop vehicle. Please note that in certain country you cannot do this.

- Setup: Send SMS : **powercar+password+space+11** it will reply "power car OK" cut off car oil and electricity .
- Cancel: Send SMS **:powercar +password+space+0**0 it will reply "power car OK" restart car again.



9.23 OTA feature

Can update firmware remotely when the GPRS and SD card work normally

- Setup: Send SMS :

fota +password+ ,ftp,v120705.bin,121.37.40.240,user,+888999+,21

it will reply "fota OK"

v120705.bin--------the name of the file which you need upgrade,
121.37.40.240-------remote server IP address,
User-------------------remote server user name,
888999----------------remote server password,
21----------------------remote server port,

(Note: separated by comma.)

Ater receiving "fota OK",the tracker starts downloading the file, 5 minutes later the platform will receive "**Download successful! Restarting...**" it means downloading is successful, then the tracker starts to update firmware automatically. The platform will receive "**Remote upgrade successful !!!**" in 2 minutes which means the updating is successful.

10. Monitoring mode

- Setup: Send SMS : **monitor+password** it will reply “monitor OK”
  When you call tracker, you can hear voices and sounds around tracker.
- Cancel: Send SMS **:tracker+password** it will reply “tracker OK”
  Transfer to tracking mode .

11. GPRS set

- Set IP address and port

  Send SMS: adminip+[password]+***space***+[IP address]+***space***+[port]
  Tracker will reply with SMS ***“ADMINIP ok!”***

  Cancel

  Send SMS:noadminip+[password]

- SET APN

  Send SMS:apn+[password]+***space***+[APN]
  Tracker will reply with SMS ***“APN ok!”***.

  Cancel

  Old APN will be deleted automatically when you set up a new one.

- Set APN User Name

  Send SMS :apnuser+[password]+***space***+[APN user name]
  Tracker will reply with SMS ***“APNUSER ok!”***

  Cancel

  Old APN user name will be deleted automatically when you set a new APN user name.

- Set APN Password

  Send SMS :apnpasswd+[password]+***space***+[APN password]
  Tracker will reply with SMS ***“APNPASSWORD ok!”***.

  Cancel

  Old APN password will be deleted automatically when you set a new APN password.

After setting up IP & Port & APN & APN user name & APN password, you can use the gprs function. Tracker will send gprs data to the server.

GPRS format:

[serial number],[authorized number],[GPRMC],[type of fix GPS],[message],imei:[imei number],[number fix satellites],[altitude],[battery status],[charging status],[Length], [crc16],[MCC],[MNC],[LAC],[CellID]

[serial number]	GPS date+GPS time
[authorized number]	Tracker authorized number
[GPRMC]	Nmea GPS info string
[type of fix GPS]	"F" GPS fix, "L" no GPS fix
[message]	it indicates message type (help me!, speed, moved, etc.)
imei:[imei number]	The identify number of GSM module
[number fix satellites]	GPS satellite fixed number
[altitude]	GPS received altitude
[battery status]	"F:4.11V" full battery, "L:3.65V" low battery
[charging status]	"1" in charging, "0" no charging
[GPSlen]	GPS string length
[crc16]	CRC16 checksum
[MCC]	Mobile Country Code
[MNC]	Mobile Network Code
[LAC]	Location area Code
[CellID]	GSM cell identities

For example:

090907070718,13145826175,GPRMC,070718.000,A,2234.0228,N,11403.0764,E,0.00,,070909,,,A*73,F,,imei:354776030042714,05,50.1,F:4.11V,0,132,40512,460,01,2533,720B

Notes:

- *GSM ID can be added or deleted according to customer's requirement.*
- *Our tracker supports TCP or UDP protocol: please confirm what protocol you need before order.*
- *Please use SIM card with GPRS function.*

Note:

- The SMS message must be Text format, can't be identified for PDU format.
- Please use the tracker outside for the first time in order to get valid gps signal

12. Cautions

Comply with instructions for use will extend the product life cycle.

- Keep the unit dry. Any liquid as rain, moisture, etc, may destroy or damage electronic mainboard.
- Don't use or store tracker in dusty places.
- Don't put tracker in overheated or overcooled places.
- Handle carefully.
- Don't vibrate or shake it violently.
- Clear tracker with a piece of dry cloth. Don't clean using chemicals detergent.
- Don't paint tracker: this may cause some foreign materials left in between parts.
- Don't disassemble or refit tracker.
- Please use battery (and charger if you need) provided by manufacturer. Using other batteries and chargers will cause unwanted situation.
- Don't dismount antenna randomly, or use different antennas. This may interfere transmission, and increase radiation as well.

13 .Faults and solutions

Faults	*Solutions*
Startup fail	Check battery charge or battery correct installation
Hangup fail	If authorized number is set, an unauthorized number call tracker. Please initialize tracker and re-setup correct authorized number
Monitor fail	Check if authorized number is setup or GSM intensity level
Indicator keep on flashing quickly	Check SIM card to see if it is put in correct place
SD card storing data fail	Check SD card to see if it is put in correct place.
Location report in zeroes digits	Tracker has no GPS fix: place tracker outdoor, especially when starting it up

Notes:

- *Tracker can send alarm SMS one time for each alarm event, or many time for each alarm event, according to customer's requirements.*
- *Commands can be sent by gprs tracking software or configured by usb cable, with the same syntax of SMS commands.*